# (19) World Intellectual Property Organization International Bureau





## (43) International Publication Date 11 December 2003 (11.12.2003)

# (10) International Publication Number WO 03/102961 A1

(51) International Patent Classification7:

PCT/US03/16723 (21) International Application Number:

28 May 2003 (28.05.2003)

(25) Filing Language:

English

G11C 16/10

(26) Publication Language:

(22) International Filing Date:

English

(30) Priority Data:

2002-160990

3 June 2002 (03.06.2002)

- (71) Applicant: MOTOROLA, INC. [US/US]; 1303 East Algonquin Road, Schaumburg, IL 60196 (US).
- (72) Inventors: SATO, Junkei,; 50-13 Hashimoto, Kamiyagari, Izumi-ku, Sendai City, Miyagi 981-3121 (JP). SASAKI, Akihiro; 1-3-1, Kuryu, Aoba-Ku, Sendai-shi, Miyagi 981-3121 (JP).
- (74) Agents: KOCH, William, E., et al.; MOTOROLA, INC., Intellectual Property Section, 7700 West Parmer Lane, MD: TX32/PL02, Austin, TX 78729 (US).

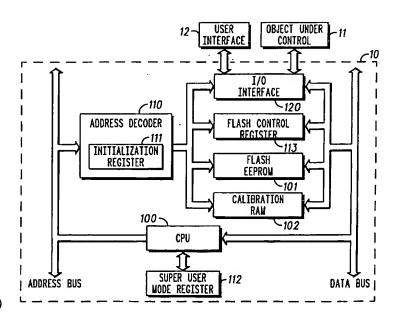
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ELECTRONIC CONTROL APPARATUS



(57) Abstract: The objective is to provide an electronic control apparatus capable of overwriting data in a nonvolatile memory, even eduring control operation. An ECU (10) includes a CPU (100), a flash EEPROM 101, and a calibration RAM (102). When calibration is performed, data in a calibration area of the flash EEPROM (101) is stored into the calibration RAM (102). A memory area of the calibration RAM (102) is overlapped over the calibration area to perform calibration. The data in the calibration area is written into the calibration RAM (102). When the calibration is completed, a super-user mode is entered in which the data stored in the calibration RAM (102) is written into the flash EEPROM (101) by use of a control register (113).